MAIDEN, V.A.; GLADKOVSKIY, L.I.; MILLER, V.Yu.; Sinitsa, A.M.

Causes of the breakdown of a conveyor gallery. Prom. stroi. 43 no. 11:13-17 '65. (MIRA 18:12)

SIDOROV, A. N.

USSR/Physical Chemistry

Card 1/1

Author : Sidorov, A. N.

Title : Infra-red absorption spectra of gaseous organic compounds adsorbed on micro-porous glass.

Periodical : Dokl. AN SSSR 95, 6, 1235 - 1238, 21 Apr 1954

Abstract : Infra-red absorption spectra of gaseous organic compounds (aceton, formaldehyde, ammonia gas, etc.) have been studied in a laboratory by the method of adsorptions. Micro-porous glass played the roll of the adsorbent. The article contains a table and diagrams of the results of these studies.

Institution : ....

Submitted : 22 Feb 1954

SIDOROV, A. N.

"Infrared Absorption Spectra of Gaseous Organic Compounds Adsorption on Microporous Glass," Iz Ak Nauk SSSR, 21 Apr 54.

Summary - A-40079, 8 Apr 55

SIDOROV A.N.

Infrared spectra of phthalocyanines and the action of gaseous compounds on them. A. N. Sidorov and A. N. Terenin. *Doklady Akad. Nauk S.S.S.R.* 100, 965-8(1955). Infrared spectra of phthalocyanines (I) were examd. by using specimens of I free of metals, as well as those with Mg, Zn, Cu, Fe, and Co. The specimens were exposed to vapors of various electron-donor substances, such as H_2O, H_2S, N_2H_4, $PhNHNH_2$, NH_3, $PhCH_2NH_2$, $PhNH_2$, Ph_2NH, pyridine, indole, and O_2. I free of metal showed no alteration of the infrared spectrum, indicating a lack of interaction. I derivs. with Mg, Zn, and Fe showed changes in the spectra after contact with the electron donors, while those with Cu and Co showed no such changes. Thus Mg, Fe, and Zn on entering the I structure do not completely lose their ability to interact with electron donors. The spectra of the addends are perturbed after such interaction (shown graphically), each variety of I having an effect peculiar to itself on the spectrum of the addend. Both shape and location of the bands are affected. G. M. Kosolapoff

(1)

Sidorov, A.N.

USSR/Physical Chemistry - Photochemistry. B-10
Radiation Chemistry. Theory of the Photographic Process

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3875

Author : Karyakin A.V., Nikitin V.A., Sidorov A.N.
Title : Photochemical Decomposition of Organic Hydroperoxides.

Orig Pub : Zh. fiz. khimii, 1955, 29, No 9, 1624-1633

Abstract : By means of color indicators (leocobase of malachite green and PbO) it was ascertained that vapor of cumene hydrogen peroxide(I), alexole and hyperole are decomposed, at 50-150°, by action of ultraviolet radiation, (shorter than 366 mμ) with formation of products that have greater oxidizing power than molecular oxygen. By the method of infrared absorption spectra, it was ascertained that the principal product of the photodecomposition of I is dimethyl phenylcarbinol (II). As a sensitizer of photodecomposition of liquid I is proposed $K_4Fe(CN)_6$. In such a case the product of the reaction is also II.

Card 1/1

GIDROV, A. N. and TERENIN, A. N.

"Infrared Spectra of Phtalocyanines With Different Central Metal Atoms", a paper presented at the Sixth International Spectroscopical Colloquium, Amsterdam, 14-19 May 1956. (Academy of Sciences of the USSR).

Translation-D5[illegible]018

SIDOROV A.N.

K-6

Category : USSR/Optics - Spectroscopy

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 5086

Author : Nikitin, V.A., Sidorov, A.N., Karyakin, A.V.
Title : Investigation of the Adsorption of Ordinary and Heavy Water on Micro-Porous Glass Using the Infrared Absorption Spectra.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 1, 117-128

Abstract : An investigation of the adsorption of H_2O and D_2O vapor by micro-porous glass of the silica-gel type with the aid of the infrared absorption spectra in the 2000 -- 10,000 cm^{-1} region has shown the following: 1) the fundamental frequency of the valent oscillation of the free groups of OH of the surface of the micro-porous glass corresponds to a narrow, intensive absorption bandwidth 3749 cm^{-1} (and its first and second harmonics 7326 and 10680 cm^{-1}). The presence of the OH groups causes also the 4540 and 8135 cm^{-1} bands. The remaining bands in the investigated region belong to the structure of the micro-porous glass (SiO_2). 2) Upon adsorption of D_2O there occurs a deuterization of the surface of the micro-porous glass with a formation of Si-OD groups. The fundamental frequency of the free SiOD groups on the surface correspond to the

Card : 1/2

Category : USSR/Optics - Spectroscopy

K-6

Abs Jour : Ref Zhur - Fizika, No 2, 195", No 5086

2761 cm^{-1} band (and to the first harmonic 5431 cm^{-1}). The presence of the OD groups causes also the 3370 cm^{-1} band. 3) By removing the HOD and H_2O molecules forming during the isotopic exchange by roasting the micro-porous glass in vacuum and by repeated adsorption of D_2O it is possible to produce deuterized micro-porous glass with any relative content of the Si-OH and Si-OD groups on the surface. 4) The adsorbed H_2O and D_2 molecules have the following characteristic adsorption bands: ν OH = 3670 cm^{-1}, ν OD = 2725 cm^{-1}, the adsorbed HOD yields νOD = 2676 cm^{-1}. 5) The H_2O and D_2O molecules are adsorbed not by the OH and OD groups on the surface of the micro-porous glass, but on other centers (Oxygen or silicon atoms).

Card : 2/2

SIDOROV, A.N.

B-13

USSR/Physical Chemistry - Surface Phenomena, Adsorption. Chromatography. Ion Exchange.

Abs Jour : Referat Zhur - Khimiya, No 6, 25 March 1957, 18749

Author : Sidorov, A.N.
Title : Investigation of Adsorption on Porous Glass by Means of Infrared Absorption Spectra.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 5, 995-1006

Abstract : In the region of vibration frequencies from 2000 to 4000 cm^{-1}, at 30°-40°, infra-red absorption spectra were investigated for vapors of: methanol (I), water (II), ammonia (III), chloroform (IV), phenol (V), benzaldehyde (VI), diethyl ether (VII) toluol, benzol, ethylbenzol acetone, acetophenone and pyridine, adsorbed on the usual porous glass (PG) and on completely deuterized and methylized porous glass (MPG) with surface groups OH,OD and OCH_3, respectively. From the results of his measurements the author concludes that on the surface of the (PG) at least

- 324 -

Card 1/3

Abs Jour : Referat Zhur - Khimiya, No 6, 25 March 1957, 18749

adsorbed molecules, absorption bands of the latter are displaced and their intensity is changed; the initial absorption band (CFT) becomes considerably wider and also is displaced - the more, the stronger are the protonoacceptor properties of the molecules of adsorbate.

SIDOROV, A.N.

Infrared absorption spectra used for the study of porous glass adsorption. Fiz. sbor. no.3:167-170 '57. (MIRA 11:8)

1. Gosudarstvennyy ordena Lenina opticheskiy institut im. S.I. Vavilova.

(Glass--Spectra)

SIDOROV, A.N.

15

V1616. Investigation of adsorption on porous glass by means of infra-red absorption spectra. A. N. Sidorov (*Zh. Fiz. Khim.*, 30, 995, 1957). In Russian. It was shown that two types of adsorption centres exist on the surface of porous glass: (1) consists of surface OH groups with a strongly polonized H atom. The adsorption centres of type (2) are possibly the valency-saturated Si atoms on the surface of porous glass. Water molecules with low relative vapour pressures are adsorbed at the adsorption centres of type (2). At high relative pressures they can join the OH groups on the surface. The forces of interaction of water molecules with surface OH groups are in both nature and magnitude of the same order as those of water in a liquid phase but considerably smaller than the interaction forces of water with adsorption centres of type (2). (8 figs., 3 tables.)

SIDOROV, A. N. Cand Phys-Math Sci -- (diss) "~~Spectroscopic~~ Spectral study in the infrared field of ~~interrelation~~ interrelation of molecules and the active centers of silicate adsorbents and metal-containing pigments." Mos, 1958. 8 pp (State Order of Lenin Optical Inst im S. I. Vavilov), 130 copies (KL, 11-58, 112)

AUTHORS: Sidorov, A. N., Nikitin, V. A. SOV/76-32-7-33/45

TITLE: A Reply to the Paper by S. P. Zhdanov "On the Part Played by the Surface Hydroxyl Groups of Porous Glass in the Adsorption of Water" (Otvet na stat'yu S. P. Zhdanova "K voprosu o roli poverkhnostnykh gidroksil'nykh grupp poristogo stekla v adsorbtsii vody")

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 7, pp 1667-1668 (USSR)

ABSTRACT: It is pointed out that in a second paper the results criticized by Zhdanov will be specified as the amount of experimental data has increased. Thus, the author found, for instance, a decrease of the intensity of the absorption band of free OH-surface groups at 3479 cm^{-1} in the water adsorption. In spite of the fact that Zhdanov pointed out the second paper he did not take into account the new data and exact definition contained therein. It is stressed that the experiments of the investigation of the adsorption were carried out by means of infrared spectroscopic methods on samples of porous glass, that the surface was dehydrated to a great extent by a thermal pretreatment, and that the explanations given main-

Card 1/2

A Reply to the Paper by S. P. Zhdanov "On the Part Played by the Surface Hydroxyl Groups of Porous Glass in the Adsorption of Water"

ly referred to this extreme case. Besides the mentioned centers found by Zhdanov as well as by A. V. Kiselev (Ref 4) it is said that also the silicon atoms at the surface of porous glass may serve as adsorption centers. The adsorption band of 3670 cm^{-1} attributed by Zhdanov to the surface hydroxyl groups does probably not correspond with facts, as already at 20° with the separation of vapor from the sample a strong decrease of the intensity of this spectral band is found and at this temperature a separation of the structural OH-groups may not be expected.

SUBMITTED: November 15, 1957

1. Porous glass--Adsorptive properties 2. Porous glass--Surface properties 3. Hydroxyl radicals--Spectra 4. Water--Adsorption 5. Infrared spectroscopy--Applications

SOV/51-6-6-21/34

24(7)

AUTHOR: Sidorov, A.N.

TITLE: Infrared Spectra of Sublimated Films of Metal Oxyquinolinates (Infrakrasnyye spektry sublimirovannykh plenok oksikhinolinatov metallov)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 6, Nr 6, pp 812-813 (USSR)

ABSTRACT: Infrared spectra of all metal oxyquinolinates were studied in order to find whether the metal atoms in these compounds are able to form molecular complexes with other molecules (additives). Pyridine and hydrazine were used as additives because they possess atoms of nitrogen with a free pair of electrons and these can be used to form coordination bonds. Samples of magnesium and aluminium oxyquinolinates were prepared in the form of films sublimated in vacuum onto sylvite plates. The spectra were recorded by means of a spectrometer IKS-11 in vacuo. Admission of saturated (at 20°C) pyridine or hydrazine vapours produced weak bands of these molecules after 15-20 hours. Simultaneously some of the oxyquinolinate bands were displaced (see the table on p 813). These spectral changes are fully reversible. The following conclusions were drawn by the author. The absorption bands in the region 700-900 cm^{-1} which are different in two oxyquinolinates correspond to those vibrations of the oxyquinolinate molecules which are affected directly

Card 1/2

by the atoms of metals. Since the same bands are displaced when oxyquinolinates interact with pyridine or hydrazine, it follows that the molecule of the additive attaches itself to the metal atom in the oxyquinolinates. The oxyqinolate spectra were not affected by water vapour both in vacuum and in air. It is known, however, that magnesium oxyquinolinate forms a dihydrate if prepared by the Berg method (Ref 4). Comparison of the spectra of anhydrous magnesium oxyquinolinate and its dihydrate (given in Ref 1) shows that attachment of water strongly reduces the intensity of the absorption band at 731 cm^{-1} and produces a wide band near 3300 cm^{-1} which is due to associated molecules. It follows that molecules of water in magnesium oxyquinolinate dihydrate are attached to the metal atom of this compound. Acknowledgment is made to A.N Terenin, Academician who directed this work. There are 1 table and 5 references, 2 of which are Soviet, 2 English and 1 German.

Card 2/2

SIDOROV, A.N.

Studying the interaction between pyridine and water by infrared absorption spectra. Opt.i spektr. 8 no.1: 51-56 Ja '60. (MIRA 13:7)
(Pyridine--Spectra)

69272
S/051/60/008/04/009/032
E201/E691

AUTHORS: Sidorov, A.N. and Teremin, A.N.

5.3920 24.3410

TITLE: The Infrared Spectra of Chlorophyll and Its Analogues

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 4, pp 482-491 (USSR)

ABSTRACT: The authors obtained the infrared absorption spectra of pheophytin, chlorophyll, Zn-, and Ni- and Cu-pheophytins in the form of solid films (Fig 3) and solutions in CCl_4 and in a mixture of pyridine and CCl_4 (Fig 4). Measurements were carried out mainly in air, except for some control tests in vacuum. In the 700-3800 cm^{-1} region the solution concentrations were 0.5 mole/litre, and cells of 0.1 mm internal thickness were used. In the 1800-3800 cm^{-1} region the authors used also dilute solutions in CCl_4 (concentrations of ~0.001 mole/litre, and internal cell thicknesses of 10-30 mm). The absorption spectra were recorded with a double-beam infrared spectrophotometer UR-10 (Carl Zeiss, Jena) with NaCl and LiF prisms. The results obtained (Figs 2-5 and a table on p 486) lead to the following conclusions. Introduction of a metal atom into the pheophytin molecule produces considerable changes in its spectrum, showing that such an atom acts not only on the nearest neighbours with

Card 1/2

The Infrared Spectra of Chlorophyll and Its Analogues

which it is bound directly, but also on the atomic groups at the periphery of the molecule. Pyridine forms a complex with chlorophyll by attaching itself directly to the central atom of magnesium. The effect of pyridine is transmitted through the magnesium atom to the whole molecule of chlorophyll and produces stabilization of the keto-form (Fig 2) of its cyclopentane ring. It is not necessary to have a metallic atom in the chlorophyll molecule in order to prepare a complex of the latter with water (cf. spectra shown in Fig 5). However, a metallic atom, particularly that of magnesium, activates the chlorophyll molecule so that it forms a complex with water more easily and the resultant complex is more stable. There are 5 figures, 1 table and 16 references, 5 of which are Soviet, 8 English, 1 mixed (Soviet and English), 1 German and 1 translation.

SUBMITTED: July 10, 1959.

S/051/60/008/06/009/024
B201/B691

5.4130

AUTHOR: Siderov, A.N.

TITLE: A Spectral Investigation of Adsorption of Water on Porous Glass as a Function of the Degree of Hydration of the Glass Surface

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 6, pp 806-810 (USSR)

ABSTRACT: The author investigated the infrared absorption spectra of porous glass with various amounts of free hydroxyl groups (OH_f) and of hydroxyl groups perturbed by mutual hydrogen bonds (OH_p); all these groups were located at the glass surface. Samples of porous glass were prepared from plates of soda-borosilicate glass DV-1 of 0.1-1.0 mm thickness by treatment with 3N hydrochloric acid at 20°C and subsequent washing in distilled water. The samples had specific surface area of 200 m^2/g and the pore dimensions were of the order of 25 Å. Preparation of the samples, adsorption treatment with methanol vapours and recording of the spectra were all carried out in a glass vacuum cell described earlier (Ref 2). The spectra were recorded with a spectrophotometer UR-2 (made by Carl Zeiss, Jena) with a lithium fluoride prism. The results are shown in Figs 1-3. It was found that the free groups (OH_f) are not the centres of adsorption of water

Card 1/2

S/051/60/008/06/009/024
E201/E691

A Spectral Investigation of Adsorption of Water on Porous Glass as a Function of the Degree of Hydration of the Glass Surface

molecules. Adsorption of water by the porous glass was governed (Figs 1, 2) by the OH_p groups in the case of hydrated surface and by "centres of the second type" (silicon or oxygen atoms, cf. Refs 1-4) in the case of a surface dehydrated by heat treatment in vacuo. The water molecules attached to "centres of the second type" were in the state intermediate between physical sorption and chemisorption. When the porous glass was heated in methanol vapours it was found that the OH_p groups were no longer effective as centres of adsorption of water (Fig 3). Acknowledgments are made to A.N. Terenin who directed this work and to I.P. Kotlyar for his help in carrying out the experiments. There are 3 figures and 7 references, 3 of which are Soviet, 3 English and 1 mixed (English and Soviet).

SUBMITTED: October 17, 1959

SIDOROV, A.N.; KOTLYAR, I.P.

Infrared spectra of phthalocyanines. Part 1. Effect of the crystalline structure and of the central atom of a metal on a phthalocyanine molecule in the solid state. Opt. i spektr. 11 no.2:175-184 Ag '61. (MIRA 14:8)
(Infrared rays)
(Phthalocyanine--Spectra)

SIDOROV, A.N.; TERENIN, A.N.

Infrared spectra of phthalocyanines. Part 2: Interaction of sublimated phthalocyanine layers with gaseous CH_3COOH, HCl, and HBr. Opt. i spektr. 11 no.3:325-331 S '61. (MIRA 14:9)
(Phthalocyanine--Spectra)

SIDOROV, A.N.

Infrared spectra of chlorophyll and its analogues. Part 2. Isotopic exchange between molecules of chlorophyll, pheophytin, and heavy water. Opt. i spektr. 13 no.3:374-378 S '62. (MIRA 15:9)

(Chlorophyll--Spectra) (Pheophytin--Spectra)
(Deuterium oxide)

SIDOROV, A.N.

Infrared spectra of phthalocyanines. Part 3. Interaction of sublimated films of phthalocyanines with water vapors. Opt.i spektr. 13 no.5:668-672 N '62. (MIRA 15:12)
(Phthalocyanine—Spectra) (Water vapor)

S/020/62/145/005/017/020
B101/B144

AUTHORS: Sidorov, A. N., and Terenin, A. N. Academician

TITLE: Spectroscopic study of the photoreduced form of pheophytin a

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1092-1094

TEXT: Pheophytin a was reduced in pyridine solution ($5 \cdot 10^{-5}$ moles/l) with H_2S (300 - 500 mm Hg) and exposure to the light of a 150 w lamp, then studied spectroscopically. After reduction, the infrared spectrum showed the following changes. The 3390 cm^{-1} band of the stretching vibrations of NH groups was shifted to 3410 cm^{-1}. The 685 and 678 cm^{-1} bands of the deformation vibrations of NH groups disappeared. The C=O band of the cyclopentanone ring shifts from 1703 to 1693 cm^{-1}. New bands occur at 1665 and 1584 cm^{-1}. Hence it is concluded that the 18-membered ring of conjugated bonds changes by addition of one electron (primary stage) (Fig. 2). The 1665 cm^{-1} band corresponds to the C=C bonds formed; the 1584 cm^{-1} bond is ascribed to the deformation vibrations of the four

KHOLMOGOROV, V. Ye.; SIDOROV, A. N.; TERENIN, A. N., akademik

Light-induced electron paramagnetic resonance signals in chlorophyll in the crystalline state and its infrared spectra. Dokl. AN SSSR 147 no.4:954-957 D '62. (MIRA 16:1)

(Chlorophyll—Spectra)
(Paramagnetic resonance and relaxation)

S/0051/63/015/006/0834/0835

ACCESSION NR: AP4009476

AUTHOR: Sidorov, A.N.

TITLE: H-D isotope exchange between chlorophyll type pigments and deuterium containing compounds

SOURCE: Optika i spektroskopiya, v.15, no.6, 1963, 834-835

TOPIC TAGS: deuteration, hydrogen deuterium exchange, isotope exchange, chlorophyll pigment, chlorophyll, pheophytin, methylchlorophyllide

ABSTRACT: The present work was a continuation of an earlier study (A.N.Sidovor,Opt. i spektr.13,374,1962) of H--D exchange between chlorophyll and pheophytin and heavy water molecules. The experimental procedure was the same, but in the present case the isotope exchange was studied under the following conditions. 1. Chlorophyll a in solution in mixture with CH_3OD + CCl_4 (10% CH_3OD by volume) was held for 2 days at 20° in the dark and then evaporated under vacuum, the deuterated pigment being deposited on a silvite (potassium chloride) plate. 2. Solid films of pheophytin a and chlorophyll a deposited on silvite plates were held at 20° in the dark for 2 days in saturated CH_3COOD vapor. 3. A solid film of methylchlorophyllide a + b was

Card 1/2

AP4009476

held at 20° for 3 days in the dark in a vapor mixture consisting of D_2O + pyridine. As in the earlier study, the criterion for H--D isotope exchange was the change in the infrared absorption spectra in the 500 to 4000 cm^{-1} region. Comparison of the before and after spectra of the pigment films showed that deuteration occurred in all cases. In fact, the changes observed in the infrared spectra as a result of isotope exchange in the present cases were virtually identical with the changes observed earlier incident to exchange between chlorophyll (and pheophytin) and heavy water. Increase of the vacuum holding temperature to 70° resulted in conversion of the chlorophyll to deuterated pheophytin.

ASSOCIATION: none

SUBMITTED: 13May63 DATE ACQ: 03Jan64 ENCL: 00

SUB CODE: PH,CH NR REF SOV: 003 OTHER: 004

Card 2/2

SHIGOROV, A.N.; NEYMARK, I.Ye. (Kiyev)

Infrared spectra of silica gels with modified surfaces. Zhur. fiz. khim. 38 no.12:2784-2791 D '64.
(MIRA 18:2)

1. Institut fizicheskoy khimii imeni L.V. Pisarzhevskogo AN UkrSSR.

SIDOROV, A.N.; VOROB'YEV, V.G.; TERENIN, A.N., akademik

Spectral study og the photoreduction of tetraphenylporphine.
Dokl. AN SSR. 152 no.4:919-922 O '63. (MIRA 16:11)

SIMOROV, A.N.

Selection of fertility restoring and sterility fixing corn plants in varietal populations. Izv. SO AN SSSR no.4 Ser. biol.-med. nauk no.1:83-90 '64. (MIRA 17:11)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 10402-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4/Pb-4/Pa-4 RM
ACCESSION NR: AP4047332 S/0020/64/158/004/0973/0976

AUTHOR: Sidorov, A. N.

TITLE: Spectral investigation of the photoreduction of Zn-tetraphenylporphine

SOURCE: AN SSSR. Doklady*, v. 158, no. 4, 1964, 973-976

TOPIC TAGS: tetrapyrrol pigment, chlorophyll, porphine, porphine metal derivative, zinc tetraphenylporphine, photoreduction, plant pigment absorption spectrum

ABSTRACT: Because there have been few spectral studies of the photoreduction of metal-containing forms of tetrapyrrol pigments, except chlorophyll, the author decided to investigate zinc tetraphenylporphine (Zn-TPP) as a continuation of his studies of metal-free pigments. The photoreduction of this specially synthesized and chromatographically purified pigment was conducted in pyridine solution at 20C under vacuum with H_2O or hydrazine and a 500-w incandescent bulb. Photoreduction with H_2S produced an almost complete conversion of Zn-TPP to zinc tetraphenylchlorin (Zn-TPC), in which the pyrrole ring

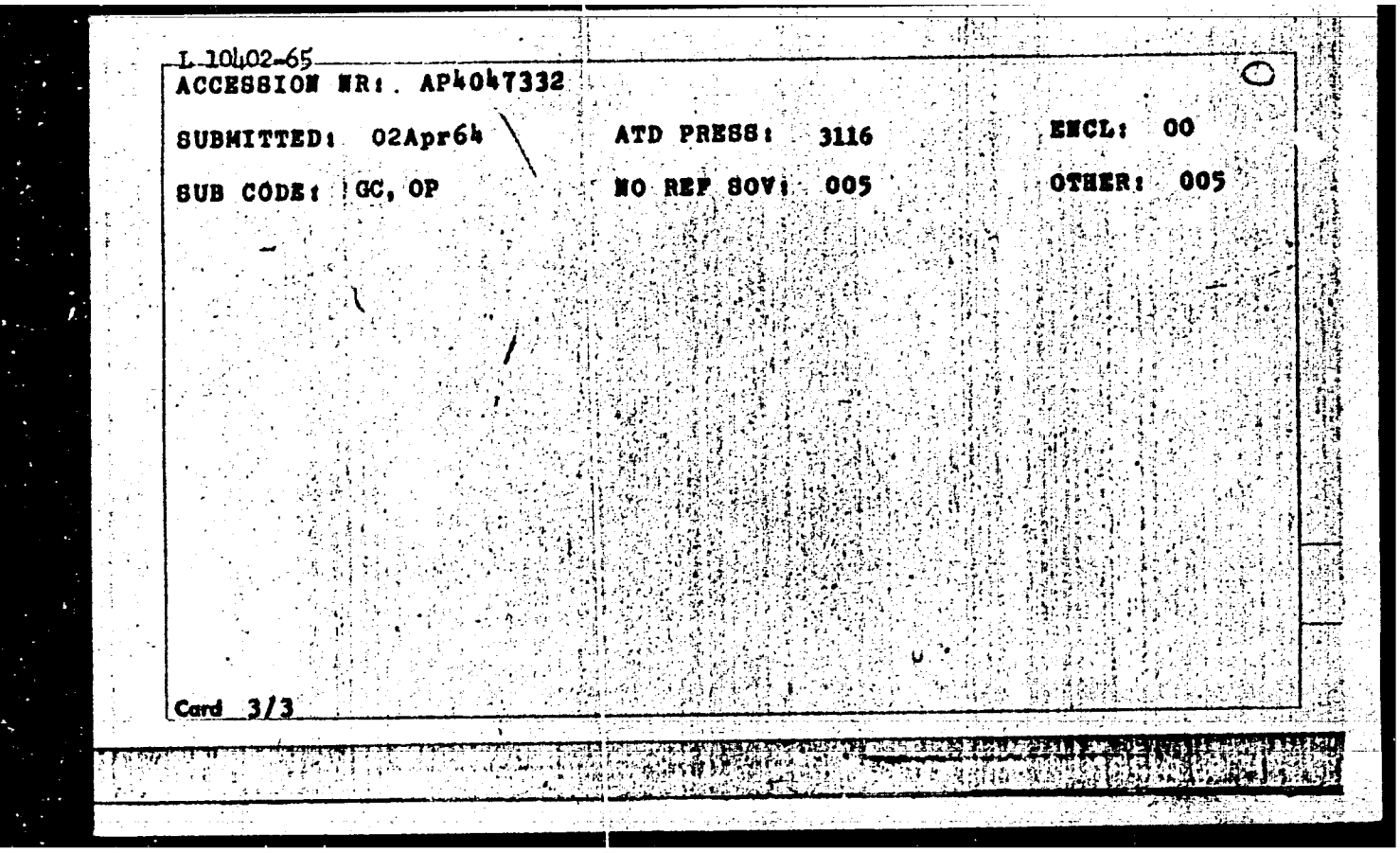
Card 1/3

L 10402-65
ACCESSION NR: AP4047332

is hydrogenated. The photoreduction with hydrazine produced first a solution of a yellow photoreduced form (PRF) with absorption bands at 390, 462, and 830 mμ. The PRF went further over into a green solution which contained, according to the absorption bands, Zn-TPC and zinc tetraphenylbacteriochlorine (ZnOTPBC). The band in the vicinity of 460 mμ is characteristic for the yellow PRF; the other two bands appear if a complex with alkaline compounds, such as NH_3 or hydrazine, is formed. It is assumed by the author that the photoreduced forms of the porphine series have a stronger tendency to produce complexes than the initial pigments. The author also finds that the band at 830 mμ is very similar to the band of the triplet-triplet absorption of pulse-excited Zn-TPP. The yellow PRF is assumed to be a product of the reduction of the cyclic system of conjugated double bonds and not of the pyrrole rings. The investigation of the structure is being continued by IR spectroscopy. The author expresses gratitude to Academician A. N. Terenin, with whose close participation the work was completed. Orig. art. has: 1 figure.

ASSOCIATION: none

Card 2/3



L 10402-65
ACCESSION NR: AP4047332

SUBMITTED: 02Apr64 ATD PRESS: 3116 ENCL: 00

SUB CODE: GC, OP NO REF SOV: 005 OTHER: 005

Card 3/3

SIDOROV, A.N.

Spectral study of hydration reaction of porphine series compounds. Biofizika 10 no.2:226-231 '65. (MIRA 18:7)

1. Gosudarstvennyy opticheskiy institut imeni Vavilova.

SIIK[illegible], V. .

...ral study of the photochemical reduction of hydrogenated derivatives of tetraphenylporphine. Dokl. AN SSSR 161 no.1:128-131 Mr '65. (MIRA 18:3)

1. Submitted September 23, 1964.

COUNTRY : USSR
CATEGORY : Cultiv. and Plants. Grains. Leguminous Grains. Tropical Cereals.
ABS. JOURN. : Ref Zh-Biologiya, No.1 , 1959, No. 1639

AUTH : Silenko, A.G.
INST. : Ukrainian Acad. of Agric. Sciences.
TITLE : The Effectiveness of Introduction of Uncommon Fertilizer under Corn Cultivation.

ORIG. PUB. : Visnik sil'skogospod. nauki. Ukr. akad. sil'skogospod. nauk, 1958, No.2, 76-77

ABSTRACT : No abstract.

CARD: 1/1

ALEKSANYAN, A.A.; BUDKOV, S.F.; YENGIBARYAN, N.S.; KLEYMENOV, N.A.; MARKEVICH, A.M.; NALBANDYAN, A.B.; SIDOROV, A.P.

Obtaining formaldehyde by direct oxidation of natural gas using atmospheric oxygen. Gaz.prom. no.6:32-40 Je '57. (MLRA 10:7)
(Formaldehyde) (Gas, Natural) (Oxidation)

SOV/137-58-8-17377

Translation from Referativnyy zhurnal, Metallurgiya 1958 Nr 8 p 169 (USSR)

AUTHORS: Gudkov, S.F., Sidorov, A.P.

TITLE: Corrosion of Metals by Products of the Incomplete Oxidation of Natural Gas by Atmospheric Oxygen in the Presence of Oxides of Nitrogen (Korroziya metallov produktami nepolnogo okisleniya prirodnogo gaza kislorodom vozdukha v prisutstvii okislov azota)

PERIODICAL: Tr. Vses. n.-i. in-t prirodn. gazov, 1958 Nr 3 (11), pp 161-169

ABSTRACT: The corrosion of a number of metals was investigated under the working conditions of an installation for the production of formaldehyde. It is demonstrated that 1Kh18N9T and Kh23N18 steels exhibit a high corrosion resistance. The 1Kh18N9T steel cannot be recommended for the construction of heaters and the reactors owing to its negative effect on the yield and quality of the products of the reaction. The same steel can be used for apparatus and piping working at a low temperature. Kh23N18 steel is recommended for apparatus and piping working in an aggressive medium at high temperature. G.K.

Card 1/1

1. Metals—Corrosion 2. Natural gas—Corrosive effects
3. Nitrogen oxides—Properties

GUDKOV, S.F., kand.tekhn.nauk; SIDOROV, A.P.

Testing the corrosion resistance of certain metals toward products of incomplete oxidation of natural gas. Khim.prom. no.8:705-706 D '59. (MIRA 13:6)

(Metals--Corrosion)

SIDOROV, A.P.

Increased use from school buildings. Gor.khos.Mosk. 28 no.5:6-8 My '54.
(MLRA 7:6)

1. Nachal'nik sektora ekspluatatsii zdaniy i sooruzheniy Moskovskogo gorodskogo otdela narodnogo obrazovaniya. (Moscow--Schoolhouses)
(Schoolhouses--Moscow)

RYABCHENKO, I.Ya.; SIDOROV, A.P., dots., otv. red.; KOTLYAROV, Yu.L., SARANYUK, T.V., tekhn. red.

[Modern forms and advanced methods for the adoption of the manufacture of new machinery designs] Sovremennye formy i progressivnye metody osvoeniia proizvodstva novykh konstruktsii mashin. L'vov, Izd-vo L'vovskogo univ., 1963. 93 p.
(MIRA 16:6)

(Machinery industry--Management)

SIDOROV, A.P.

Organization and prospective development of automotive transportation in Novosibirsk Province. Izv. Sib. otd. AN SSSR no.5:90-100 '58.
(MIRA11:9)

1.Zapadno-Sibirskiy filial AN SSSR.
(Novosibirsk Province--Roads)

SIDOROV, A.P.

Determining the resistance coefficient of floating channels containing rapids with comparatively high turbulence and supercritical channel slope. Trudy LTA no.86:57-74 '58 (MIRA 13:3)

1. Kafedra vodnogo transporta lesa Leningradskoy ordena Lenina lesotekhnicheskoy akademii imeni S.M. Kirova.
(Lumber--Transportation)

SIDOROV, A.P.

Effect of the system of wages used in automotive transportation on the distribution of the transportation system. Trudy Transp.-energ. inst. Sib. otd. AN SSSR no. 10:127-150 '60. (MIRA 14:1)
(Wages) (Transportation, Automotive)

SIDOROV, A. P.

Cand Tech Sci - (diss) "Study of the control of waterways of rapids-filled sections of navigable rivers having turbulent course." Moscow, 1961. 24 pp with illustrations; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Forestry Engineering Inst); 150 copies; free; (KL, 6-61 sup, 225)

[redacted], kand. ekonom. nauk, dotsent

Specification for the calculation of production capacities in the machinery industry. Vest. mashinostr. 44 no.10:81-82 O '64. (MIRA 17:11)

BELOUS, L.Kh., st. nauchn. sotr.; KAZANSKIY, Yu.P.; VDOVIN, V.V.; KLYAROVSKIY, V.M.; KUZNETSOV, V.P.; NIKOLAYEVA, I.V.; NOVOZHILOV, V.I.; SENDERZON, E.M.; AKAYEV, M.S.; BABIN, A.A., BERDNIKOV, A.P.; GORYUKHIN, Ye.Ya.; NAGORSKIY, M.P.; PIVEN', N.M.; BAKANOV, G.Ye.; GEBLER, I.V.; SMOLYANINOV, N.M.; SMOLYANINOVA, S.I.; YUSHIN, V.I.; D'YAKONOVA, N.D.; REZAPOV, N.M.; KASHTANOV, V.A.; GOL'BERT, A.V.; SIDOROV, A.P.; GARNASH, A.A.; BYKOV, M.S.; BORODIN, L.V.; AYCHKOV, L.F.; KUCHIN, M.I.; SHAKHOV, F.N., glav. red.; SHLAKOVSKAYA, L.I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorudnyi bassein. Novosibirsk, Red.-izd. otdel Sibirskogo otdniia AN SSSR, 1964. 447 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR (for Belous, Kazanskiy, Vdovin, Klyarovskiy, Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N.Kh.---(continued). Card 2.

Tomskiy politekhnicheskiy institut (for Bakanov, Gebler, Smolyaninov, Smolyaninova). 5. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya(for Yushin, D'yakonova, Rezapov, Kashtanov, Gol'bert). 6. Institut ekonomiki sel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskiy institut (for Bykov, Borodin, Ryabkov). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuchin). 9. Chlen-korrespondent AN SSSR (for Shakhov).

PETROV, Yakov Petrovich; SLABODKIN, A.Ya., dots.,kand.tekhn. nauk, retsenzent; SIDOROV, A.P., dots., kand. tekhn. nauk, retsenzent; PUZANOV, N.F., st. nauchn. sotr., otv. red.; VASIL'YEVA, N.V., red.

[Amphibious units for lumber floating; textbook for students of the Faculty of Woodworking and Forest Engineering] Vezdekhodnye agregaty-amfibii dlia splava; uchebnoe posobie dlia studentov lesomekhanicheskogo i lesoinzhenernogo fakul'tetov. Leningrad, Vses. zaochnyi lesotekhn. in-t, 1964. 61 p. (MIRA 18:5)

S/194/62/000/006/104/232
D288/D308

9.4330

AUTHORS: Kononov, B.N., and Sidorov, A.S.

TITLE: Tunnel diodes and their application as triggers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-4-64 i (V sb. Poluprovodnik. pribory i ikh primeneniye. no. 7, M., Sov. radio, 1961, 341-357)

TEXT: Static volt-amp characteristics of germanium tunnel diodes (TD) are considered. A circuit is shown for taking these characteristics. Parameters of 15 experimental TD were measured. The results of these are tabulated. The relationship between current ratio I_{max}/I_{min} and voltage V_{min} corresponding to I_{min} is pointed out. I_{max}/I_{min} increasing with V_{min}. The temperature dependence of the characteristic is checked. With rising temperature the maximum of the volt-amp characteristic is displaced downwards, and the minimum upwards and to the left. Transient response of a single TD trigger is calculated analytically. The volt-amp characteristic of the TD

Card 1/2

is approximated by sections of power functions. Calculations yield approx. durations of the positive and negative drop front: $t_f^+ = 2\gamma_0 C$, $t_f^- = 20\rho_0 C$, where $\rho_0 = (V_{min} - V_{max})/(I_{max} - I_{min})$. The differential capacitance of the TD is measured near the minimum of the volt-amp characteristic of the TD. A circuit is given for the measurement of this capacitance. In the analysis of transient processes the TD capacitance was assumed as constant and equal to the diff. capacitance at the minimum of the volt-amp characteristic of the TD. 4 references. [Abstracter's note: Complete translation.]

Card 2/2

SIDOROV, A.S.

Pneumatic press with turnable heads. Biul.tekh.-ekon.inform.Gos. nauch.-issl.inst.nauch.i tekh.inform. no.12:32-33 '63. (MIRA 17:3)

KONONOV, B.N.; SIDOROV, A.S.; LEONOV, V.F.

Current discriminators on tunnel diodes. Prib. i tekh. eksp. 8 no.5:103-106 S-O '63. (MIRA 16:12)

SIDOROV, A.S.

Volunteer Design Office in action. Razved. i okh. nedr 30 no.12:52-53 D '64. (MIRA 18:4)

1. Ural'skoye geologicheskoye upravleniye.

L 20450-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AT6008786 SOURCE CODE: UR/2657/65/000/014/0131/0142

AUTHOR: Sidorov, A. S.

57

B+1

ORG: none

TITLE: Tunnel diode counting circuits 66

SOURCE: Poluprovodnikovyye pribory i ikh primeneniye; sbornik statey, no. 14, 1965, 131-142

TOPIC TAGS: pulse counter, tunnel diode, computer circuit

ABSTRACT: The principle of operation and characteristics of two pulse counters using tunnel diodes are described. The first (Fig. 1) is a three-stage binary counter whose input circuit and interstage coupling circuits consist of monostable multivibrators. For each positive pulse, the multivibrators give out two consecutive pulses of opposite polarity. All the tunnel diodes utilized in the circuit are Soviet-made GaAs diodes carrying the designation 3I30IV. Tests made of an eight-stage counter of the same design showed flawless performance, even at bias voltage variations of 7.0—9.2 v. The maximum counting frequency never fell below 10 Mc. The eighth stage was activated 30 nsec after the appearance of a signal at the counter input. The second pulse counter (Fig. 2) uses series-connected tunnel diodes which are switched in succession. The output pulse appears after application of a number of pulses at the input equal to the number of series-connected tunnel diodes. The capacitors at the

Card 1/3 UDC: 621.374.32:621.382

L 20450-66

ACC NR: AT6008786

0

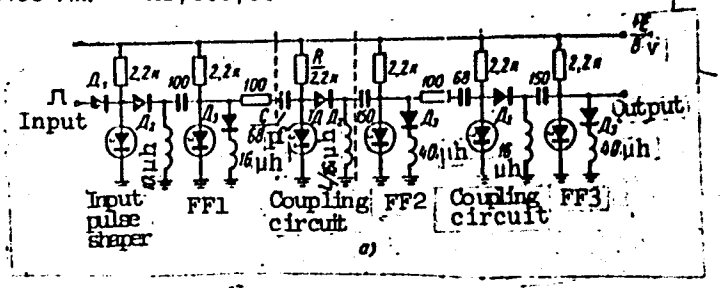


Fig. 1. Three-stage TD binary counter

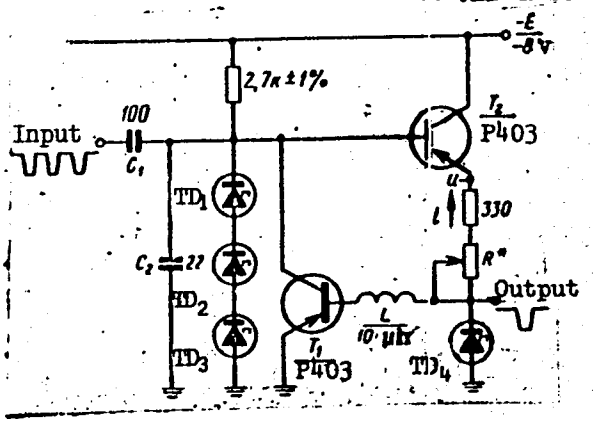


Fig. 2. One stage of a ternary counter

Card 2/3

L 20490-66
ACC NR: AT6008786

input are necessary for the formation of slow wavefronts which allow sufficient time for the internal capacitances of the diodes to charge up. A threshold element consisting of an emitter follower with TD_4 as the load activates the output pulse. The counter performed satisfactorily at bias voltage variations of 6.5—10 v. The maximum frequency of the counter was 10—12 Mc. Orig. art. has: 5 figures. [BD]

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 006/ ATD PRESS: 4222

Card 3/3 BK

L 55099-65 EWT(1)/EWA(h) Peb GG

ACCESSION NR: AP5014887 UR/0142/65/008/002/0243/0252
621.382

AUTHOR: Sidorov, A. S.

19
B

TITLE: Static characteristics of a two-tunnel-diode trigger 15

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 2, 1965, 243-252

TOPIC TAGS: trigger, tunnel diode trigger

ABSTRACT: The static characteristics of a GaAs tunnel-diode trigger are analyzed. A d-c equivalent circuit is considered, and formulas for the supply voltage, current-distributing resistors, and storage current are given. The effect of the supply-source internal resistance is evaluated. The sensitivity of the trigger biased in forward and reverse directions is explored. It is found that: 1) The calculation of the trigger d-c operation includes estimating the optimum values of the supply voltage and resistors from the known diode characteristics. 2) The trigger input characteristics can be determined from the diode-parameter

Card 1/2

L 55099-65
ACCESSION NR: AP5014887

spread taken in the most unfavorable combination. 3) The output characteristics, especially the trigger load capacity, essentially depend on the interaction of the diodes in the course of trigger bissing. 4) Both trigger states are stable at circuit and diode parameter deviations up to 20% of the rated values. 5) The current sensitivity of the forward-operating trigger is rather low (up to 0.75 I_{1av}) which makes chain operation of such triggers difficult; the reverse operation of the triggers is more favorable for chain circuitry. Orig. art. has: 4 figures, 43 formulas, and 1 table. [03]

ASSOCIATION: none

SUBMITTED: 23Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 003 OTHER: 004 ATD PRESS: 4024

Card 2/2

SIDOROV, A.S., inzh.

Using waste rock in making concrete. Biul. stroi. tekh. 12 no.6: 9-10 Je '55. (MIRA 11:12)

1.Karagandagipreshakht.
(Concrete)

SOV/97-59-3-11/15

AUTHORS: Ochinskiy, V. I., Architect, Sidorov, A. S. Engineer and Shul'ts, E. E. Engineer

TITLE: New Truss Construction

PERIODICAL: Beton i zhelezobeton, 1959, Nr 3, pp 136-137 (USSR)

ABSTRACT: The truss construction described and illustrated in this article is made up of three separate units (Figs 1 and 2) which are reinforced by welded reinforcement skeleton consisting of three 4 mm diameter longitudinal bars and cross-reinforcement of 3 mm diameter bars spaced 25-30 cm apart. In the bottom frame two 10 mm diameter rods are left protruding for later fixing of the ceiling. Individual parts of the truss are joined together by cement grout mark 100. The trusses are cast on concreting yard KPP of the Sochispetsstroy. The frames can be placed in position without cranes as the heaviest unit weighs only 60 kg. The table on p 137 gives consumption of concrete and steel for trusses used for a house with 28 apartments. In comparison with

Card 1/2

New Truss Construction

steel trusses they require only one-third of the volume of concrete and one-sixth of the weight of steel. The trusses are cast in steel forms on vibrating tables. There are 2 figures and 1 table.

Card 2/2

S/142/61/004/003/007/016
E095/E382

9,2560 (1139, 1159, 1161)

AUTHOR: Sidorov, A.S.

TITLE: Temperature-stable transistor converter of voltage changes into changes of frequency

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1961, v. 4, no. 3, pp. 300 - 307

TEXT: The well-known relationship between the differential capacitance of a p-n junction and the voltage across it is utilized to convert direct voltage changes into changes of frequency. The preferred circuit of the converter was experimetnally found to be a common-base oscillator with the base DC biased from a potentiometer and a resistor in the emitter. A p-n junction diode Д811 (D811) shunts the collector inductance. The purpose of the diode is to act as an additional (to the collector capacitance) differential capacitance and to increase the frequency stability. A plot of frequency against supply voltage is almost a straight line; (f = 350 kc/s, E = 7 V, f = 383 kc/s, E = 10 V). Measurement of the frequency drift shows that $\Delta f/f$ is a linear function of temperature.

Card 1/3

Temperature-stable transistor ....

Of the total drift, 60% (i.e. -0.9×10^{-4} 1/deg is due to the transistor, the remainder being contributed by the diode. Causes of frequency drift associated with the transistor are examined and it is shown that the temperature dependence of the inverse collector current Ico has little influence on the frequency stability as compared with other factors. The best temperature coefficient obtained with this circuit is -1.6×10^{-4} 1/deg. Methods of temperature stabilisation are analysed. The most effective proved to be the base thermistor method, for which a temperature coefficient of $\pm 0.45 \times 10^{-5}$ 1/deg was obtained. Frequency instability of this circuit over a period of 3 hours at f = 390 kc/s was $\pm$ 30 c.p.s. There are 8 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

29626
S/142/61/004/003/007/016
Temperature-stable transistor E095/E382

The English-language reference mentioned in the text is:
Ref. 1 - W. Shockley - BSTJ, 1949, 28, no. 3, 435.

ASSOCIATION: Kafedra elektroniki Moskovskogo inzhenerno-fizicheskogo instituta (Department of Electronics of Moscow Engineering Physics Institute)

SUBMITTED: July 14, 1960

Card 3/3

SIDOROV, A.V. (Ivanovo obl., dr.Stalina, d.29, pod"yezd 11, kv. 101)

Problem of melanomas of the skin [with summary in English] Vop.onk. 2 no.4:478-480 '56. (MLRA 9:12)

1. Iz Ivanovskogo oblastnogo inkologicheskogo dispansera (glav. vrach. - kandidat meditsinskikh nauk A.N.Styskin)
(SKIN NEOPLASMS, case reports,
melanoma (Rus))
(MELANOMA, case reports,
skin (Rus))

SIDOROV, A.T., starshiy prepodavatel'

Statistical testing method (Monte-Carlo method) with the use of an electronic analog computer. Izv. vys. ucheb. zav.; mashinostr. no.3:77-82 '65. (MIRA 18:6)

1. Leningradskiy mekhanicheskiy institut.

SIDOROV, A.V., inzh.

Study of the electroosmotic treatment of concrete. (MIRA 15:2)
Gidr. stroi. 32 no.12:21-24 D '61.
(Concrete--Testing)
(Electroosmosis)

SIDOROV, A.V.

The phenomenon of electroosmosis in the dehydration of concrete. Inzh.-fiz. zhur. 5 no.6:110-114 Je '62. (MIRA 15:12)

1. Vsesoyuznyy institut po proyektirovaniyu organizatsii energeticheskogo stroitel'stva, Kuybyshev.
(Electroosmosis) (Concrete)

SIDOROV, A.V.

Lipoma of the stomach simulating a malignant tumor; one observation. Vop.onk. 11 no.11:90-91 '65.
(MIRA 19:1)

1. Iz Ivanovskogo oblastnogo onkologicheskogo dispansera (glavnyy vrach - kand.med.nauk, zasluzhennyy vrach RSFSR A.N.Styskin).

SIDOROV, B.

USSR/ Electronics

Card 1/1 Pub. 89 - 27/33

Authors : Grigor'yev, M., and Sidorov, B. (Frunze and Moscow, Resp.)

Title : The "Zvuk" hearing aid as an amplifier for a defect detector. Fastening tube panels

Periodical : Radio 2, page 52, Feb 56

Abstract : The first author tells how the commercial hearing aid, the "Zvuk," can be used in connection with other devices as an amplifier in detecting breaks and short circuits in telephone cables. A method for fastening tube panels without the use of rings is dealt with in the second article.

Institution : .....

Submitted : .....

SIDOROV, B.

Strengthening tube holders. Radio no.2:52 F '56. (MLRA 9:5)
(Electron tubes)

SOV/107-59-2-42/55

9(2)

AUTHOR: Sidorov, B. and Korzhevskiy, L.

TITLE: An Approximate Determination of Condenser Capacitance (Orientirovochnoye opredeleniye yemkosti kondensatorov)

PERIODICAL: Radio, 1959, Nr 2, p 55 (USSR)

ABSTRACT: This is a short description of how to determine approximately the capacity of condensers using an avometer (e.g. the TT-1). For this purpose the author recommends the use of condenser charge current, which will excite the throw of the avometer indicator. The approximate capacity is determined according to the amplitude of the indicator throw.

Card 1/1

SIDOROV, B. (Moskva)

Checking of the operation of the blocking oscillator in television equipment. Radio no.12:43 D '60. (MIRA 14:1)
(Television) (Oscillators, Electric)

SALTANOV, L.; YEVGEN'YEV, Yu.; SIDOROV, B.

Exchange of experience. Radio no.4:54 Ap '61. (MIRA 14:7)
(Radio, Shortwave) (Television)

SIDOROV, B. (Moskva)

The "Malysh" radio receiver with modified schematic. Radio no.7:46 Jl '62. (MIRA 16:6)

(Transistor radios)

DAVIDENKOV, N.N.; SIDOROV, B.A.

Physical yield point of cold hardened copper. Inzh.-fiz.zhur. no.4: 53-59 Ap '58. (MIRA 11:7)

1.Fiziko-tekhnicheskiy institut AN SSSR, g. Leningrad.
(Copper--Testing)

SOV/126-6-1-33/33

AUTHOR: Sidorov, B. A.

TITLE: On the Initial Stage of Plastic Deformation of Metals (K voprosu o nachal'noy stadii plasticheskoy deformatsii metallov)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 1, pp 191-192 (USSR)

ABSTRACT: Rauzin and Zheleznyakova (Refs.1 and 2) arrived at the conclusion that during the initial stage of tensile stressing only mutual displacement of grains relative to each other takes place and only at some later "critical" stage of deformation will this displacement become substituted by shifts inside the grains. It was found that the boundary between these two mechanisms of deformation depends on the speed and the temperature of deformation, the state of the transient boundary layer and the grain size. The yield point areas in the tensile stress diagrams of iron are also explained by these authors by the relative displacement of the grains. The author of this paper considers that these views are not sufficiently justified and criticises the experimental technique used by these authors who studied, by means of a microscope with a magnification of 600 times, the surface

Card 1/3

of deformed specimens, noting the size of the "critical" deformation at which the first visible slip lines appear; absence of such lines was assumed by the author as a proof that the grains did not get deformed but only mutually displaced. However, it is obvious to assume that in the case of low values of deformation, the slip lines are not sufficiently pronounced and can simply not be detected with the above mentioned magnification; in the same way as in the subsequent stages, the deformation is composed of intragranular slips. The author of this paper concludes that the assumptions expressed by Rauzin and Zheleznyakova on the particular mechanism of deformation of polycrystals in the initial stage of deformation cannot be considered sufficiently

On the Initial Stage of Plastic Deformation of Metals SOV/126-6-1-33/33

justified, at least not at the state of present knowledge.
There are 4 references, 3 of which are Soviet, 1 English.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR
(Institute for Physics and Technology, Ac. Sc., USSR)

SUBMITTED: January 14, 1957

Card 3/3

1. Metals--Deformation 2. Metals--Temperature factors
3. Metals--Structural analysis 4. Metals--Test results

USCOMM-DC-55891

[illegible], B.A. [illegible]

[illegible] of defe[illegible] goods. [illegible]vein.prom. no.[illegible] Jl-Ag '64.
(MIRA 17:10)

L 58404-65 EWP(e)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4 IJP(c)
ACCESSION NR: AP5016930 JD/JG UR/0089/65/018/006/0608/0616
546.45.001.2

AUTHOR: Davidenkov, N. N. (Deceased); Sidorov, B. A.; Shestopalov, L. M.; Mironov, N. F.; Bogorad, N. M.; Izhvanov, L. A.; Kostogarov, S. E.

TITLE: Investigation of the mechanical properties of beryllium

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 608-616

TOPIC TAGS: beryllium, sintered beryllium, cast beryllium, extruded beryllium, beryllium mechanical property

ABSTRACT: Beryllium powders, 99.02—99.59% pure with a particle size of -500 or -50 μ, obtained by reduction of beryllium fluoride with magnesium, vacuum distillation, or electrolysis of beryllium chloride, were consolidated by cold compacting and vacuum sintering, hot compacting in air or in a vacuum, or by melting and centrifugal casting. A part of the specimens was additionally extruded at 450—500C with a reduction of 75%. The density of metal varied from 1.75—1.82 g/cm^2 for cold-compacted and sintered specimens to almost the theoretical for hot-compacted or extruded specimens. It was found that at 20C the elongation and reduction of area did not exceed 5%. The ductility of sintered beryllium increased sharply with increasing temperature to a maximum at 400—500C, and then decreased. The strength and ductility of hot-compacted beryllium powders increased with decreasing particle

Card 1/2

L 58404-65

ACCESSION NR: AP5016930

size. Electrolytic and distilled beryllium is more ductile than that obtained by reduction with magnesium. Beryllium extruded from hot-compacted powders with a grain size of -50 μ (the mean grain size 20—25 μ) had the highest strength and ductility at both room and elevated temperatures (up to 600C). For example, at room temperature the tensile strength was 45 kg/mm^2, the true tensile strength—48 kg/mm^2, the elongation—3.6% and the reduction in area—4.0%; at the temperature of maximum ductility, the elongation and reduction of area was 60 and 66%, respectively. Mechanical properties of sintered and of hot-compacted beryllium differed only slightly. But, generally, nonextruded, sintered and hot-compacted beryllium had comparatively low strength and ductility. However, after extrusion, the strength and ductility increased by 2—3 times; the yield strength increase was less pronounced. Cast beryllium was more brittle than beryllium prepared by the powder-metallurgy method; it remained brittle even with heating to 400C. The values of the strength and ductility obtained in compression tests were noticeably higher than those obtained in tension tests. Orig. art. has: 14 figures and 2 tables. [NS]

ASSOCIATION: none

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: MM, IC

NO REF SOV: 003 OTHER: 006 ATD PRESS: 4042

Card 2/2 SOP

MIROSHNICHENKO, I.P., kand.tekhn.nauk; SIDOROV, B.K., inzh.

Universal open-type freighter. Sudostroenie 26 no.9:5-11 S'60.
(MIRA 13:10)

(Freighters)

SIDOROV, B.K., inzh.

Perishable cargo carrier "Leninskii Komsomol." Sudostroenie 26 no. 11:1-9 N '60. (MIRA 14:1)
(Freighters)

SIDOROV, B.K., inzh.

Freighter "Poltava" with watertight holds. Sudostroenie 27 no.6:1-10 Je '61. (MIRA 14:6)
(Freighters)

SIDOROV, B.K., inzh.

Timber carrier or general-purpose ship. Sudostroenie 27 no.11: 10-13 N '61. (MIRA 15:1)

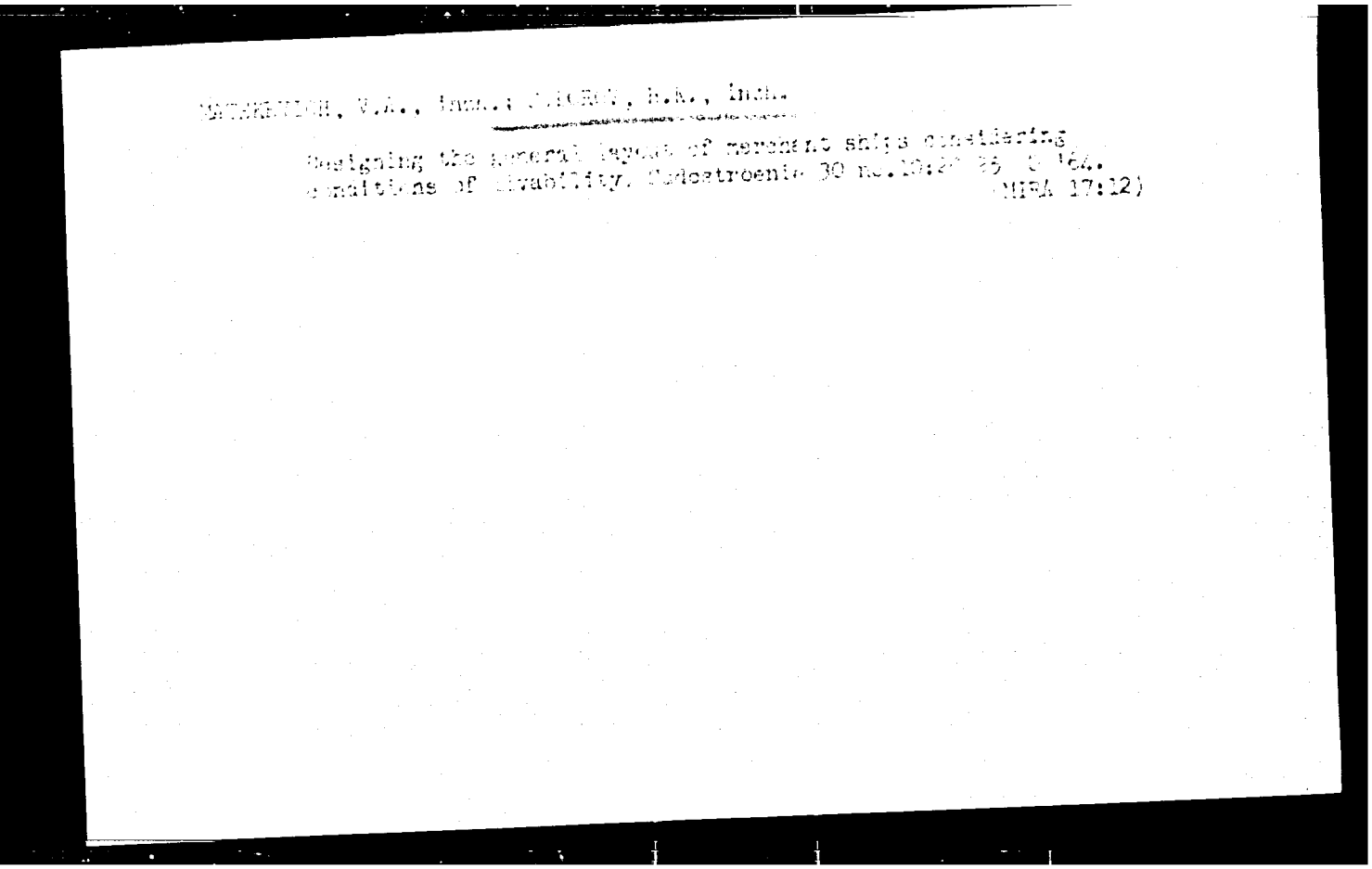
(Freighters)

SIDOROV, B.K., inzh.

Universal dry-cargo vessels with a dead weight of 7,000 and 12,000 tons. (MIRA 15:12)
Sudostroenie 28 nd.11:1-8 N '62.
(Merchant ships--Cargo)

SIDOROV, B.K., inzh.

Detailed choice of the general dimensions of ships is mandatory. (MIRA 16:7)
Sudostroenie 29 no.6:1-4 Je '63.
(Naval architecture)



[illegible], V.A., kand. tekhn. nauk, [illegible], K.K., inzh.

Designing the general layout of merchant ships considering conditions of survivability. Sudostroenie 30 no.10:24-26 O '64. (MIRA 17:12)

L 4213-66 EWT(d)/EWP(t)/ETI (1)
ACC NR: AP6016740 (N) SOURCE CODE: UR/0229/65/000/012/0009/0013

14
B

AUTHOR: Sidorov, B. K.

ORG: None

14

TITLE: How to cut loading time

SOURCE: Sudostroyeniye, no. 12, 1965, 9-13

TOPIC TAGS: cargo handling equipment, packaging techique, ocean transportation, transportation equipment, crane, marine engineering

ABSTRACT: The author studies methods for shortening loading operations and selection of loading equipment for dry goods freighters. The following means are proposed for solving this problem: a) setting up highly productive methods for loading, and mechanizing difficult load handling; b) standardizing loading docks, packaging and conveyers; c) improving the technology and organization of loading, equipping ports for prompt unloading and loading; d) converting freighters for fast handling. Ships must also be designed to meet the requirements of fast loading and unloading. Various types of cargo handling are discussed and various types of ship designs are studied. The advantages of using cranes for loading and their application in the Soviet Union are considered. The development of loading equipment for freighters cannot be studied apart from the means for improving ships and loading. Load handling is one of the

UDC: 629.123.4.013/015:621.86/87

Card 1/2

L 41213-66

ACC NR: AP6016740

main problems and its solution can be achieved by designing ships with a sufficient degree of deck opening and crane type loading equipment. The lift capacity of cranes, rate of work and control must be improved. This can be accomplished by mechanization, introduction of hydraulics and programming. All of these means contribute to the development of loading equipment for dry goods freighters. Orig. art. has: 4 figures, 1 table.

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Card 2/2 MLP

ARDASHEV, B.P., inzh.; MATIKEVICH, V.A., inzh.; SIDOROV, B.K., inzh.

Lumber carriers of the Vytegrales type. Sudostroenie 31 no.1:5-12 Ja '65. (MIRA 18:3)

L 10925-67

ACC NR: AR6034797 (N) SOURCE CODE: UR/0398/66/000/008/A011/A011

AUTHOR: Miroshnichenko, I. P.; Vorobtsov, Ye. S.; Sidorov, B. K. 2

TITLE: Architectural and construction improvements and cargo characteristics of the SEV-2 universal dry-cargo ships with a dead weight of 12500 tons to be built between 1966 and 1970

SOURCE: Ref. zh. Vodnyy transport, Abs. 8A64

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 67, 1965, 120-128

TOPIC TAGS: cargo ship, shipbuilding engineering, marine engine, cargo handling/595 A II ship

ABSTRACT: The results are presented of investigations of ships with a dead weight of about 12,500 tons carried out at the Central Scientific Research Institute of the Maritime Fleet (TsNIIMF). An estimate is given for the adaptability of different classes of ships to high-speed cargo handling. The 595 A II with twin hatches is found to be the most efficient ship. The main dimensions and characteristics of this ship are as follows: The maximum length—152.8 m, the length between uprights—140.0 m, width—20.6 m, side height to top deck—12.3 m,

Card 1/2 UDC: 629.12.001.2.001.1

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draft at the plimsoll line—9.1 m, dead weight—12,800 tons, power of the main engine—9000 hp, and cruising speed—17.2 knots. [Translation of abstract]

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Card 2/2

SIDOROV, B.M.; PIDSAN, D.I.

Mechanization of the loading of potatoes and other bulk materials.
Trudy Ukr.NIISP no.8:108-115 '63. (MIRA 17:3)

SIDOROV, B.M.; PIDGAN, D.I.

Standardization and packaging of the vitaminized biomycin feed preparation (BKV). Trudy UkrNIISP no.9:117-119 '64.
(MIRA 17:10)